AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated hereafter.

1. (Currently Amended) A device for grasping and supporting a live object, the device comprising:

a pair of counter rotating supporting structures configured to compel the live object in an x-translational direction at an x-translational speed, each supporting structure including an upper portion and a lower portion, and wherein the upper portion includes a plurality of apertures having a first configuration and the lower portion includes a plurality of apertures having a second configuration;

a compliant finger disposed within each of the plurality of apertures, the pair of counter rotating supporting structures are further configured to provide an opening for receiving the live object and wherein the compliant fingers are further configured to ~~support and constrain~~ grasp and hold a body of the live object; and

a speed control module for controlling the speed and timing of the rotation of the supporting structures.

2. (Original) The device of claim 1, wherein each compliant finger further comprises a structural rigidity between approximately 0.08 Nm^2 and approximately 0.35Nm^2.

3. (Original) The device of claim 1, wherein the lower portion of the supporting structure is further configured to include at least three compliant fingers each disposed in an individual aperture for supporting a body of the live object.

4. (Original) The device of claim 3, wherein the upper portion of the supporting structure is further configured to include at least two compliant fingers for constraining the body of the live object from above.

5. (Original) The device of claim 4, wherein the three compliant fingers each disposed in an aperture in the lower portion of the supporting structure further comprises a first finger of a first length, a second finger of a second length and a third finger of a third length.

6. (Original) The device of claim 5, wherein the two complaint fingers each disposed in an aperture in the upper portion of the supporting structure further comprises a fourth finger of a fourth length and a fifth finger of a fifth length.

7. (Currently Amended) The device of claim 1, wherein the compliant fingers disposed in the plurality of apertures in the upper portion of the supporting structure incline ~~downward~~ upward and the compliant fingers disposed in the plurality of apertures in the lower portion of the supporting structure incline ~~upward~~ downward.

8. (Original) The device of claim 1, wherein the compliant fingers comprise a rubber material.

9. (Original) The device of claim 1, wherein the speed control module is further configured to synchronize the rotation of the supporting structures with a conveyor transporting the live object.

10. (Original) The device of claim 1, wherein the speed control module is further configured to vary the x-translational speed of the live object while constraining the body in the compliant fingers.

11. (Original) The device of claim 10, further comprising a conveyor for transporting the live object towards the pair of counter rotating supporting structures, the conveyor further comprises a pallet assembly having a perch bar movably affixed to the conveyor, and wherein the perch bar is configured to receive the live object.

12. (Previously Presented) The device of claim 11, further comprising a shackle movably affixed to the perch bar, the shackle having a pair of grippers for gripping extended legs of the live object, and wherein when the perch bar declines under the shackle, the set of compliant fingers of the pair of counter rotating supporting structures constrains the live object therein.

13. (Original) The device of claim 12, wherein the speed control module controls the timing of the rotation of the supporting structures such that the rotation of the supporting structures is synchronized with the movement of the pallet assembly.

14. (Original) The device of claim 12, wherein the speed control module controls the timing of the rotation of the supporting structures in relation to the speed of the conveyor such that the rotation of the supporting structures moves the live object from the compliant fingers of the pair of counter rotating supporting structures at a specified rate.

15. (Original) The device of claim 1, wherein the pair of counter rotating supporting structures are further configured to rotate at a same speed.

16. – 21. (Canceled)

22. (Currently Amended) A system comprising:

a pallet assembly having a perch bar supporting structure, the perch bar supporting structure including perch bars;

a shackle assembly movably affixed to the pallet assembly, the shackle assembly comprising a pair of ~~compliant~~ non-rigid grippers;

a trap bar assembly, the trap bar assembly rotatably affixed to the pallet assembly;

a shackle control mechanism affixed to the shackle assembly, the shackle control mechanism configured to lock and release the shackle assembly from the pallet assembly; and

a trolley configured to move in an x-translational direction, the trolley affixed to the pallet assembly.

23. (Original) The system of claim 22, wherein the pallet assembly is configured to include rollers for traversing on a conveyor, the pallet assembly further being configured to travel along a separate track of the conveyor from a track of the conveyor utilized by the trolley.

24. (Previously Presented) The system of claim 23, wherein the conveyor further comprises a drop cam, configured to define a transition in a z-direction, wherein the z-direction comprises a normal vector relative to a conveyor surface.

25. (Previously Presented) The system of claim 24, wherein the trolley is configured to move along the drop cam in a z-translational direction while continuing to travel in the x-translational direction.

26. (Original) The system of claim 24, wherein the shackle control mechanism further comprises a shackle stopper and a shackle releaser, and wherein the shackle stopper and shackle releaser provide for a move or stop control in both an x and z-direction.

27. (Original) The system of claim 26, wherein the shackle assembly further comprises a shackle and an x-translational guide, the x-translational guide configured to provide for forward and backward movement of the shackle in the x-translation direction relative to the pallet assembly, and movement of the shackle in the z-direction to stay above the pallet assembly when the trolley of the pallet assembly moves along the drop cam.

28. (Previously Presented) A system comprising:

a pallet assembly having a perch bar supporting structure, the perch bar supporting structure including perch bars;

a shackle assembly movably affixed to the pallet assembly, the shackle assembly comprising a pair of compliant grippers;

a trap bar assembly, the trap bar assembly rotatably affixed to the pallet assembly;

a shackle control mechanism affixed to the shackle assembly, the shackle control mechanism configured to lock and release the shackle assembly from the pallet assembly;

a trolley, affixed to the pallet assembly;

wherein the pallet assembly is configured to include rollers for traversing on a conveyor, the pallet assembly further being configured to travel along a separate track of the conveyor from a track of the conveyor utilized by the trolley;

wherein the conveyor further comprises a drop cam;

wherein the shackle control mechanism further comprises a shackle stopper and a shackle releaser, and wherein the shackle stopper and shackle releaser provide for a move or stop control in both an x and z-direction; and

wherein the shackle assembly further comprises an x-motion guide configured to mount a trap-bar cam profile, magnetic lock and linear bearings that guide the shackle assembly in an x-direction, and z-motion guide rods on which the pair of compliant grippers and a shackle motion-control rod are affixed.

29. (Original) The system of claim 22, further comprising a back panel affixed to a rear portion of the pallet assembly.

30. (Original) The system of claim 22, wherein the trap bar assembly comprises a magnetic lock, a roller and a cam, and the trap bar assembly is configured to rotate along an axis that is fixed with respect to the pallet assembly.

31. (Original) The system of claim 22, further comprising a pair of counter rotating supporting structures for receiving a live object deposited onto the pallet assembly, each supporting structure includes an upper portion and a lower portion each having a plurality of apertures disposed therein, and wherein the pair of counter rotating supporting structures are further configured to provide an opening for receiving the live object, and compliant fingers disposed within the apertures of each supporting structure, the compliant fingers are further configured to support and constrain a body of the live object.

32. (Original) The system of claim 31, further comprising a speed control module for controlling the speed and timing of the rotation of the supporting structures in relation to movement of the conveyor.

33. (Currently Amended) An automated feet gripping system, comprising:

a pallet assembly for locking and releasing an isolated live object, the pallet assembly including a perch bar for receiving the isolated live object;

a conveyor for transporting the pallet assembly, the conveyor further configured to include a drop-cam for lowering the pallet assembly;

a pair of rotating hands having fingers for ~~constraining~~ fully supporting the isolated live object while the pallet assembly is lowered;

a shackle assembly movably affixed to the pallet assembly, the shackle assembly further configured to receive feet of the isolated live object from perch bars when the pallet assembly is lowered and to shackle the feet of the isolated live object in the shackle assembly;

a first speed control module for controlling the speed of a conveyor; and

a second speed control module for controlling the speed and timing of the rotation of the pair of rotating hands in relation to speed of the conveyor.

34. (Original) The system of claim 33, wherein the conveyor further comprises an inverter portion that follows an inversion path for inverting the isolated live object shackled in the shackle assembly.

35. (Previously Presented) The system of claim 34, wherein the first speed control module and the second speed control module add claim to speed profile.

36. – 44. (Canceled)

45. (Currently Amended) A feet-gripping system comprising:

a perch bar having a z-direction compliance, the z-direction being a direction along a superior-inferior axis of a live object, the perch bar being configured to support a live object;

grippers having a y-direction compliance, the y-direction being a direction along a lateral axis of the live object, the grippers being configured to grasp and fully support a live object; and

first assembly comprising a spring, the first assembly having an x-direction compliance, the x-direction being a direction along an anterior-posterior axis of the live object.

46. (New) The system of claim 22, wherein the perch bars are configured to have a z-direction compliance.

47. (New) The system of claim 22, wherein the grippers are configured to have a y-direction compliance.

48. (New) The system of claim 22, wherein the shackle control mechanism further comprises a shackle stopper and a shackle releaser, and wherein the shackle stopper and shackle releaser provide for a move or stop control in both an x and z-direction.

49. (New) The system of claim 23, wherein the conveyor further comprises an inverter portion that follows an inversion path for inverting the isolated live object shackled in the shackle assembly.

50. (New) The system of claim 23, further comprising a first speed control module configured to control the speed of the conveyor.

51. (New) The system of claim 50, further comprising a second speed control module configured to control the speed and timing of the rotation of a plurality of supporting structures in relation to the speed of the conveyor.

52. (New) The device of claim 1, further comprising a locking mechanism configured to maintain a position of the pair of supporting structures.

53. (New) The device of claim 52, wherein the locking mechanism is further configured to release the body of the live object corresponding to a specific x-translational position.